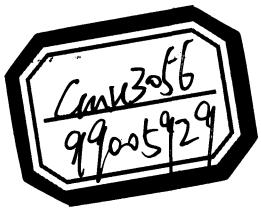

ESO 1591

OHIO FARM MACHINERY ECONOMIC COST ESTIMATES FOR 1989*

Revised and Adapted for Ohio

by
Allan E. Lines
Extension Economist

June 1989

Department of Agricultural Economics and Rural Sociology
Ohio Cooperative Extension Service
The Ohio State University

*Data prepared by: Earl Fuller and Bill Lazarus, Extension Economists, and Dave Nordquist, research assistant, Department of Agricultural and Applied Economics, University of Minnesota.

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The data which follows is designed as an aid in estimating farm machinery use or function costs for 1989. The estimates are determined by economic-engineering formula and represent an average farming industry cost for a specific machine or machine operation.

There are two types of costs associated with owning and operating a machine: overhead and operating. Overhead costs are incurred whether or not the machine is used, provided it is owned. Overhead costs include depreciation, interest, insurance, housing and taxes. Operating costs, which occur only when the machine is used, include fuel, lubrication, repairs and labor.

Overhead Costs: Each machine is costed over 10 years. Salvage value at 10 years of life ranges from 16 to 30 percent according to the current Agricultural Engineer's Yearbook. Repair and maintenance calculations are based on the same source. Major purchases of new machinery remain infrequent. Good used equipment is becoming scarce. Managers, striving for cost control, can sometimes still buy a second item twinned to one now in current use.

Purchase cost for equipment, as shown in the tables, is based on a survey of dealers, companies, and extension agents. They are not list prices, but rather reflect current market conditions. Price competition exists. Delivery charges are recognized. Commonly-purchased optional items are included. Purchase often includes a delay in delivery. Interest and insurance rates are assumed to be 12 percent and .75 percent of new cost, respectively. Housing cost is assumed to be 75 cents per square foot of shelter space needed per year. There are no personal property taxes on farm machinery in Ohio.

Formulas used to compute machinery overhead costs:

Depreciation per year $= \frac{\text{purchase cost - salvage value}}{\text{years you will use machine}}$

Interest/year $= \frac{\text{purchase cost + salvage value}}{2} \times \text{interest rate}$

Insurance/year $= \frac{\text{purchase cost + salvage value}}{2} \times \text{rate}$

Housing/year = price per sq. foot x sq. feet shelter space required

Taxes/year = 0 (no taxes on personal property in Ohio)

Operating Expenses: Fuel cost is calculated by multiplying the fuel consumption by the price of fuel, with fuel consumption assumed to be .06 gallons of diesel fuel per horsepower hour. The price of farm fuel is assumed to be 80 cents per gallon for diesel. All power units, tractors, combines, trucks, etc., are assumed to be diesel powered. An estimate of gasoline consumption can be made by multiplying the diesel fuel consumption by a factor of 1.36. Lubrication cost is assumed to be 10 percent of fuel cost. Supplies such as twine, wrapping or preservatives are not included.

The formulas for estimating the repair and maintenance costs estimate total accumulated repair costs according to the accumulated hours of use; the total costs are then broken down to a per hour cost estimate. The amount of annual use of a machine is an estimate of the number of hours a typical commercial farmer would likely use that particular machine in one year.

Labor Costs are kept separate from the operating expenses. Labor is charged at an hourly wage rate, which includes 30 percent of benefits, of $7.00 per hour for unskilled labor and $9.50 per hour for skilled labor. Labor per acre for an operation such as plowing and disking is calculated by using the work performance rate on the implement. Therefore, plows and disks using the same tractor have different per acre labor requirements. Less labor per acre is used in a disking operation that covers more acres per hour than in a plowing operation.

Machine function or average cost per acre worked increased from 1988 estimates. The following table compares the machinery function costs per acre for four selected items from 1986 to 1989.

Field Operation	1986	1987	1988	1989
plow 6-16's	$12.48	$ 9.55	$10.12	$12.26
corn planter 6-30	9.12	8.90	9.44	10.96
combine small grain	18.51	15.66	16.47	21.56
combine corn 6-30	27.42	23.38	24.80	28.75

These estimates are not necessarily representative of any one individual's cost, but can help plan the cropping operation if other data are not available. Differences in buying power, repair programs, average annual use, and overall replacement programs should be considered. Machinery costs are substantial; control of them is important. Custom charges are often based upon them.

No one should do custom work unless the charge will cover operating costs including labor. Ideally all allocated per acre or hour overhead costs should also be covered by anyone offering to do custom work. The market for custom work usually does not cover all costs. The market is usually somewhere in between the operating costs and the total of operating and allocated overhead.

The following tables provide the 1989 machinery function costs broken down into several categories. Some relevant supporting data also are included.

TILLAGE

Machine	Tractor Size (HP)	Net Cost of A New Implement	--Estimated-- Work Performed Ac/Hr	Ac/Yr	Total Cost /Acre	Total Cost /Hour	Operating Expense /Acre	--- Total Cost/Acre --- Equipment Tractor	Machine	Labor Charge	Diesel Fuel Gal/Ac
Moldboard Plow 2-16	40	1,485	1.16	139	14.68	17.04	3.16	6.14	2.38	6.15	2.07
Moldboard Plow 3-16	60	2,556	1.75	209	12.47	21.77	3.17	5.65	2.73	4.09	2.06
Moldboard Plow 4-16	75	5,495	2.33	279	12.58	29.26	3.44	5.15	4.36	3.07	1.93
Moldboard Plow 5-16	100	7,150	2.91	349	13.15	38.22	3.87	6.15	4.55	2.46	2.06
Moldboard Plow 6-16	120	8,776	3.49	454	12.26	42.78	3.90	5.74	4.47	2.05	2.06
Moldboard Plow 7-16	140	10,218	4.07	529	11.93	48.56	3.89	5.72	4.46	1.75	2.06
Moldboard Plow 8-16	160	12,507	4.65	605	11.98	55.74	4.09	5.69	4.76	1.55	2.06
Moldboard Plow 9-18	225	15,286	5.89	884	11.79	69.47	4.15	6.26	4.32	1.21	2.29
Moldboard Plow 10-18	225	17,548	6.55	982	11.18	73.21	3.94	5.63	4.46	1.09	2.06
Moldboard Plow 12-18	275	19,356	7.85	1,178	11.03	86.62	3.90	6.01	4.11	0.91	2.10
Chisel Plow 10 ft.	75	2,758	4.36	436	5.77	25.16	1.45	2.74	1.39	1.64	1.03
Chisel Plow 15 ft.	120	3,260	6.55	655	5.24	34.28	1.56	3.06	1.09	1.09	1.10
Chisel Plow 17 ft.	140	3,725	7.42	742	5.19	38.53	1.59	3.14	1.09	0.96	1.13
Chisel Plow 20 ft.	160	7,948	8.73	873	5.74	50.11	1.77	3.03	1.89	0.82	1.10
Chisel Plow Wing 24 ft.	225	9,064	10.47	1,047	5.95	62.32	1.80	3.52	1.75	0.68	1.29
Chisel Plow Wing 29 ft.	250	10,936	12.65	1,265	5.77	72.98	1.71	3.46	1.74	0.56	1.19
Chisel Plow Wing 35 ft.	300	12,015	15.27	1,527	5.32	81.20	1.65	3.27	1.58	0.47	1.18
Field Cultivator 12 ft.	75	2,314	6.06	727	3.86	23.37	0.99	1.98	0.70	1.18	0.74
Field Cultivator 18 ft.	100	4,292	8.73	1,047	3.73	32.56	1.04	2.05	0.87	0.82	0.69
Field Cultivator 28 ft.	160	8,264	13.58	1,629	3.51	47.65	1.11	1.95	1.04	0.53	0.71
Field Cultivator 37 ft.	225	9,969	17.94	2,153	3.39	60.83	1.04	2.05	0.94	0.40	0.75
Field Cultivator 50 ft.	250	14,055	24.24	2,909	3.07	74.48	0.91	1.81	0.97	0.29	0.62
Disk Chisel 9 ft.	100	6,125	3.82	382	9.45	36.07	2.30	4.68	2.90	1.87	1.57
Disk Chisel 11 ft.	120	6,914	4.91	638	7.60	37.29	2.13	4.08	2.06	1.45	1.47
Disk Chisel 14 ft.	140	8,639	6.00	1,200	6.65	39.90	2.16	3.88	1.58	1.19	1.40
Tandem Disk 10 ft.	60	3,810	4.85	485	4.96	24.06	1.02	2.03	1.46	1.47	0.74
Tandem Disk 16 ft.	75	5,871	7.76	776	3.87	30.02	0.81	1.54	1.41	0.92	0.58
Tandem Disk 17 ft.	75	9,443	8.24	824	4.39	36.16	0.84	1.45	2.07	0.87	0.55

TRACTORS AND SELF-PROPELLED

Tractor Combine or Truck Size	Net Cost of the New Power Unit	Annual Hours of Use	--Overhead-- Cost per Year	Hour	--Operating-- Expense per Hour	Year	-- Total Cost -- /Year of Use	/Hour of Use	Maintenance and Repair Cost/Hour	Diesel Use/Hour Gallons
40 Hp	13,541	500	2,103	4.21	2.92	1,462	3,565	7.13	0.81	2.4
60 Hp	18,093	500	2,804	5.61	4.25	2,127	4,930	9.86	1.09	3.6
75 Hp	21,678	500	3,356	6.71	5.26	2,630	5,986	11.97	1.30	4.5
100 Hp	36,324	550	5,602	10.18	7.68	4,223	9,824	17.86	2.40	6.0
120 Hp	39,555	550	6,097	11.09	8.95	4,921	11,018	20.03	2.61	7.2
140 Hp	45,790	550	7,074	12.86	10.41	5,728	12,802	23.28	3.02	8.4
160 Hp	54,710	600	8,440	14.07	12.39	7,432	15,872	26.45	3.94	9.6
180 Hp	64,696	600	9,968	16.61	14.16	8,497	18,465	30.78	4.66	10.8
190 Hp	66,940	600	10,315	17.19	14.85	8,911	19,226	32.04	4.82	11.4
225 Hp 4Wd	69,663	500	10,745	21.49	15.36	7,682	18,426	36.85	3.48	13.5
250 Hp 4Wd	85,527	500	13,173	26.35	17.48	8,738	21,911	43.82	4.28	15.0
275 Hp 4Wd	91,309	500	14,058	28.12	19.09	9,543	23,601	47.20	4.57	16.5
300 Hp 4Wd	95,260	500	14,663	29.33	20.60	10,302	24,964	49.93	4.76	18.0
320 Hp 4Wd	110,775	500	17,037	34.07	22.43	11,217	28,255	56.51	5.54	19.2
350 Hp 4Wd	116,025	500	17,841	35.68	24.28	12,141	29,981	59.96	5.80	21.0
Sml Combine	57,780	300	9,165	30.55	28.50	8,549	17,713	59.04	23.22	6.0
Med Combine	68,161	300	10,826	36.09	33.72	10,117	20,943	69.81	27.39	7.2
Lrg Combine	84,015	300	13,347	44.49	41.41	12,424	25,771	85.90	33.76	8.7
Jmb Combine	97,440	300	15,480	51.60	49.71	14,914	30,393	101.31	39.15	12.0
Pickup Truck	13,000	500	2,110	4.22	3.29	1,645	3,755	7.51	0.65	3.0
Medium Truck	39,900	500	6,377	12.75	5.52	2,758	9,135	18.27	2.00	4.0
Tandem Truck	45,000	500	7,199	14.40	6.39	3,193	10,392	20.78	2.25	4.7

PLANTING

Machine	Tractor Size (HP)	Net Cost of a New Implement	---Estimated-- Work Performed Ac/Hr	Ac/Yr	Total Cost/ Acre	Total Cost/ Hour	Operating Expense/ Acre	----Total Cost/Acre---- Equipment Tractor	Machine	Labor Charge	Diesel Fuel Gal/Ac
Seed Potato Filler		6,401	5.75	322	3.57	20.54	0.28	0.00	3.57	0.00	0.02
Potato Row Marker 4 Row	120	8,061	4.98	214	12.52	62.37	1.93	4.02	6.14	2.37	1.45
Potato Row Marker 6 Row	140	12,243	7.47	321	10.91	81.48	1.53	3.12	6.22	1.58	1.12
Potato Planter 4 Row	120	25,000	3.83	214	30.85	118.18	4.20	5.23	20.28	5.34	1.88
Potato Planter 6 Row	140	35,000	5.75	322	26.55	152.56	3.55	4.05	18.94	3.56	1.46
Beet Planter 12 Row	100	20,000	4.67	280	19.09	89.07	2.96	3.83	12.73	2.52	1.29
Grain Drill Pw 12 ft.	40	6,450	4.78	382	7.03	33.58	1.18	1.49	3.33	2.21	0.50
Grain Drill Pw 14 ft.	40	7,185	5.57	446	6.35	35.38	1.07	1.28	3.18	1.89	0.43
Grain Drill Pw 16 ft.	60	10,299	6.37	510	7.16	45.63	1.35	1.55	3.96	1.66	0.57
Grain Drill Pw 20 ft.	75	12,369	7.96	637	6.63	52.83	1.32	1.50	3.81	1.32	0.57
Grain Drill Pw 24 ft.	75	15,603	9.56	765	6.35	60.70	1.24	1.25	4.00	1.10	0.47
Grain Drill Pw 28 ft.	100	17,680	11.15	892	6.43	71.72	1.36	1.60	3.88	0.95	0.54

TILLAGE - Continued

Machine	Tractor Size (HP)	Net Cost of A New Implement	--Estimated-- Work Performed Ac/Hr	Ac/Yr	Total Cost /Acre	Total Cost /Hour	Operating Expense /Acre	--- Total Cost/Acre --- Equipment Tractor	Machine	Labor Charge	Diesel Fuel Gal/Ac
Tandem Disk 20 ft.	100	9,607	9.70	970	4.39	42.61	0.97	1.84	1.82	0.74	0.62
Tandem Disk 21 ft.	100	11,543	10.18	1,018	4.51	45.90	0.96	1.75	2.05	0.70	0.59
Tandem Disk 24 ft.	120	12,705	11.64	1,164	4.31	50.11	0.97	1.72	1.97	0.61	0.62
Tandem Disk 28 ft.	140	18,656	13.58	1,358	4.70	63.82	1.01	1.71	2.46	0.53	0.62
Tandem Disk 32 ft.	160	21,692	15.52	1,552	4.66	72.32	1.05	1.70	2.50	0.46	0.62
Tandem Disk 40 ft.	180	27,480	19.39	1,939	4.48	86.86	0.99	1.59	2.52	0.37	0.56
Offset Disk 14 ft.	140	9,136	6.11	611	7.71	47.13	1.97	3.81	2.74	1.17	1.37
Offset Disk 16 ft.	160	9,712	6.98	698	7.36	51.41	2.02	3.79	2.55	1.02	1.38
Offset Disk 18 ft.	180	10,370	7.85	785	7.26	56.99	2.04	3.92	2.43	0.91	1.38
Offset Wing Disk 21 ft.	225	11,620	9.16	916	7.10	65.09	1.90	4.02	2.30	0.78	1.47
Offset Wing Disk 23 ft.	225	15,335	10.04	1,004	7.13	71.61	1.81	3.67	2.75	0.71	1.35
Landplane 45-12 ft.	180	7,416	6.40	480	9.10	58.25	2.52	4.81	3.11	1.18	1.69
Landplane 55-14 ft.	225	15,908	8.00	600	10.70	85.60	2.45	4.61	5.15	0.95	1.69
Landplane 70-14 ft.	225	16,871	7.47	560	11.87	88.63	2.66	4.94	5.92	1.01	1.81
Springtooth Drag 30	60	2,079	16.00	480	1.83	29.29	0.29	0.62	0.74	0.47	0.23
Springtooth Drag 48	75	2,596	27.93	977	1.20	33.44	0.21	0.43	0.50	0.27	0.16
Corn Planter 4-36	40	8,250	3.93	275	10.29	40.41	1.51	1.82	5.67	2.81	0.61
Corn Planter 6-36	60	13,350	5.89	412	9.61	56.60	1.55	1.67	6.06	1.87	0.61
Corn Planter 6-30	60	12,302	4.91	344	10.96	53.82	1.78	2.01	6.71	2.24	0.73
Corn Planter 8-30	75	16,542	6.55	458	10.26	67.15	1.73	1.83	6.75	1.68	0.69
Corn Planter 12-30	100	24,675	9.82	687	9.65	94.76	1.70	1.82	6.71	1.12	0.61
Min-Til Planter 4-36	60	9,024	3.05	214	14.79	45.16	2.47	3.23	7.95	3.61	1.18
Min-Til Planter 6-36	75	13,119	4.58	321	12.68	58.11	2.19	2.61	7.67	2.41	0.98
Min-Til Planter 6-30	75	12,034	3.82	267	14.47	55.23	2.53	3.14	8.44	2.89	1.18
Min-Til Planter 8-30	100	17,334	5.09	356	14.75	75.11	2.75	3.51	9.08	2.16	1.18
Min-Til Planter 8-36	100	21,322	6.11	428	14.00	85.53	2.53	2.92	9.27	1.80	0.98
Min-Til Planter 12-30	160	24,890	7.64	535	13.57	103.63	2.81	3.46	8.66	1.44	1.26

HARVESTING

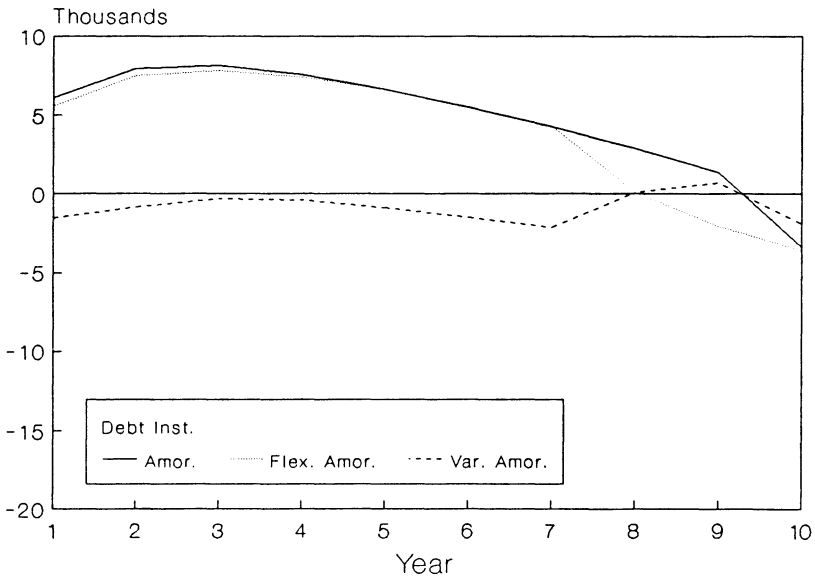
Machine	Tractor Size (HP)	Net Cost of a New Implement	---Estimated-- Work Performed Ac/Hr	Ac/Yr	Total Cost/ Acre	Total Cost/ Hour	Operating Expense/ Acre	----Total Cost/Acre---- Equipment Tractor	Machine	Labor Charge	Diesel Fuel Gal/Ac
Mower-Conditioner 9 ft.	40	8,095	4.09	327	8.08	33.05	1.16	1.74	4.45	1.88	0.59
Rotary Mower/Condition	75	8,702	4.64	371	8.38	38.88	1.56	2.58	4.22	1.59	0.97
Swather-Cond 12 ft.		28,639	5.45	436	12.80	69.84	1.01	0.00	11.52	1.28	0.55
Swather-Cond 15 ft.		30,940	6.82	545	10.98	74.84	0.84	0.00	9.95	1.03	0.44
Swather 12 ft.		18,191	5.82	465	8.28	48.19	0.77	0.00	7.08	1.20	0.52
Swather 15 ft.		18,908	7.27	582	6.86	49.90	0.62	0.00	5.90	0.96	0.41
Swather 18 ft.		22,000	8.73	698	6.48	56.51	0.56	0.00	5.67	0.80	0.34
Swather 20 ft.		22,335	9.70	776	5.91	57.35	0.50	0.00	5.19	0.72	0.31
1 Ton Stacker	60	12,500	4.15	829	8.57	35.53	2.23	2.38	3.65	2.54	0.87
3 Ton Stacker	75	18,330	4.84	1,064	9.08	43.89	2.73	2.48	4.42	2.18	0.93
6 Ton Stacker	100	29,500	5.53	1,548	11.01	60.84	4.19	3.23	5.87	1.91	1.09
Baler Pto Twine	40	7,965	3.78	756	7.26	27.45	1.62	1.89	2.59	2.79	0.63
Round Baler 1500 Lb.	60	12,600	4.64	927	7.06	32.75	1.99	2.13	3.26	1.68	0.78
Round Baler 1000 Lb.	60	10,552	3.01	603	10.07	30.35	2.81	3.27	4.22	2.58	1.19
Rotary Mower 6 ft.	40	3,862	2.73	273	8.13	22.17	1.72	2.61	2.95	2.57	0.88
Rake (Hyd) 9 ft.	40	2,816	3.49	698	5.14	17.95	1.24	2.04	1.09	2.01	0.69
Forage Harvester 1 Row	60	13,822	0.95	95	48.37	45.73	7.86	10.43	26.79	11.15	3.81
Forage Harvester 2 Row	100	16,441	1.65	165	35.41	58.59	6.93	10.80	18.24	6.37	3.63
Forage SP Harvstr 2 Row		70,566	2.04	305	50.82	103.50	8.95	0.00	45.65	5.18	3.63
Forage SP Harvstr 3 Row		80,987	3.05	458	38.40	117.31	6.85	0.00	34.95	3.45	2.78
Large Forage Blower	60	3,740	1.00	50	29.29	29.29	4.75	9.86	12.43	7.00	3.60
Corn Picker 2-36	40	17,273	1.42	213	28.38	40.25	4.95	5.03	15.92	7.44	1.69
Picker-Sheller 2 Row	60	15,391	1.49	223	27.23	40.55	5.31	6.62	13.53	7.08	2.42
Combine Sm Grain Sml	Sml	5,685	4.10	819	18.46	75.64	7.31	14.41	1.48	2.57	1.46
Combine Sm Grain Med	Med	6,232	4.73	945	18.40	87.00	7.47	14.77	1.41	2.23	1.52
Combine Sm Grain Lge	Lrg	6,909	6.30	1,261	16.47	103.82	6.85	13.63	1.17	1.67	1.38
Combine Soybeans Sml	Sml	7,790	3.58	717	21.72	77.87	8.51	16.47	2.31	2.94	1.67
Combine Soybeans Med	Med	8,293	4.14	827	21.56	89.16	8.67	16.88	2.13	2.55	1.74
Combine Soybeans Lge	Lrg	9,167	4.96	993	21.40	106.22	8.82	17.31	1.97	2.12	1.75

CROP MAINTENANCE

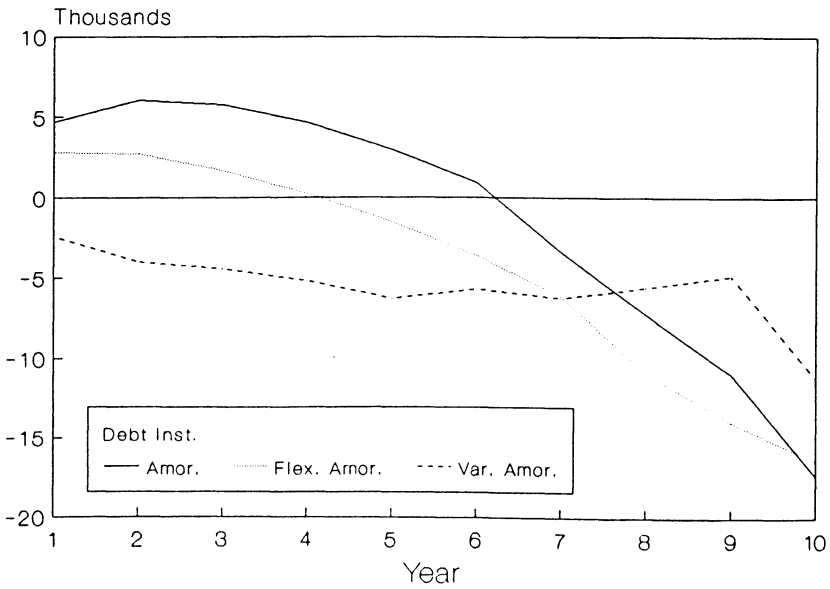
Machine	Tractor Size (HP)	Net Cost of a New Implement	---Estimated-- Work Performed Ac/Hr	Ac/Yr	Total Cost/ Acre	Total Cost/ Hour	Operating Expense/ Acre	----Total Cost/Acre---- Equipment Tractor	Machine	Labor Charge	Diesel Fuel Gal/Ac
Cultivator 4-36	40	2,845	4.65	465	4.25	19.79	0.76	1.53	1.16	1.56	0.52
Cultivator 6-36	60	4,158	6.98	698	3.58	25.01	0.74	1.41	1.13	1.04	0.52
Cultivator 6-30	60	3,018	5.82	582	3.93	22.88	0.85	1.69	0.99	1.25	0.62
Cultivator 8-30	75	4,063	7.76	776	3.48	27.00	0.79	1.54	1.00	0.94	0.58
Cultivator 12-30	140	5,730	11.64	1,164	3.55	41.29	1.00	2.00	0.92	0.63	0.72
Ridge-Cultivator 4-36	75	4,250	4.65	465	5.85	27.22	1.33	2.57	1.70	1.58	0.97
Ridge-Cultivator 6-36	100	6,270	6.98	698	5.28	36.87	1.30	2.56	1.67	1.05	0.86
Ridge-Cultivator 6-30	100	5,180	5.82	582	5.97	34.76	1.52	3.07	1.65	1.25	1.03
Ridge-Cultivator 8-36	100	8,420	9.31	931	4.38	40.77	1.02	1.92	1.67	0.79	0.64
Ridge-Cultivator 8-30	100	7,230	7.76	776	4.96	38.50	1.19	2.30	1.72	0.94	0.77
Ridge-Cultivator 12-30	160	11,950	11.64	1,164	4.88	56.78	1.29	2.27	1.88	0.72	0.83
Rotary Hoe 16 ft.	40	2,455	10.86	434	2.32	25.25	0.31	0.66	1.02	0.64	0.22
Potato Cultivator 4 Row	75	3,200	6.13	889	3.90	23.89	1.04	1.95	0.76	1.19	0.73
Potato Cultivator 6 Row	75	5,029	9.19	1,287	2.91	26.76	0.75	1.30	0.82	0.79	0.49
Beet Cultivator 12 Row	100	7,500	6.00	360	7.75	46.53	1.43	2.98	3.56	1.21	1.00
Sprayer 30 ft.	40	3,160	14.18	1,135	1.91	27.05	0.29	0.50	0.57	0.84	0.17
Sprayer 50 ft.	60	3,980	23.64	2,364	1.28	30.29	0.25	0.42	0.36	0.50	0.15
Sprayer Hi Pres 50 ft.	60	17,370	23.64	2,364	2.41	56.85	0.48	0.42	1.49	0.50	0.15
Anhydrous Applicator	160	13,110	12.73	509	7.70	97.99	1.72	2.08	4.89	0.73	0.75
Fertilizer Spreader 40	60	6,822	38.79	1,164	1.56	60.34	0.23	0.25	1.06	0.24	0.09
Shredder 12 ft.	60	6,244	4.36	436	6.51	28.42	1.30	2.26	2.65	1.60	0.82
Manure Spreader 150 bu	75	3,213	3.49	349	7.86	27.43	2.38	3.43	2.38	2.05	1.29
Manure Spreader 225 bu	100	5,256	3.49	349	11.04	38.54	3.63	5.12	3.88	2.05	1.72
Manure Spreader 400 bu	100	9,280	4.65	465	10.48	48.80	3.54	3.84	5.11	1.53	1.29
Gravity Box 185 Bu	60	1,373	1.65	215	11.85	19.61	2.92	5.96	1.66	4.23	2.18
Gravity Box 240 Bu	75	1,782	1.65	215	13.55	22.42	3.63	7.24	2.08	4.23	2.72
Baled Hay Wagon	40	1,595	3.78	945	6.15	23.28	1.00	1.89	0.57	3.70	0.63
Forage Wagon 14 ft.	40	5,353	1.65	215	14.14	23.39	3.13	4.31	5.60	4.23	1.45
Forage Wagon 16 ft.	40	6,813	1.65	215	15.51	25.65	3.51	4.31	6.97	4.23	1.45

Figure 7. Expected Yearly Debt/Saving Balance, Lambda = .33.

Panel A. Beginning Debt = $20,000



Panel B. Beginning Debt = $40,000

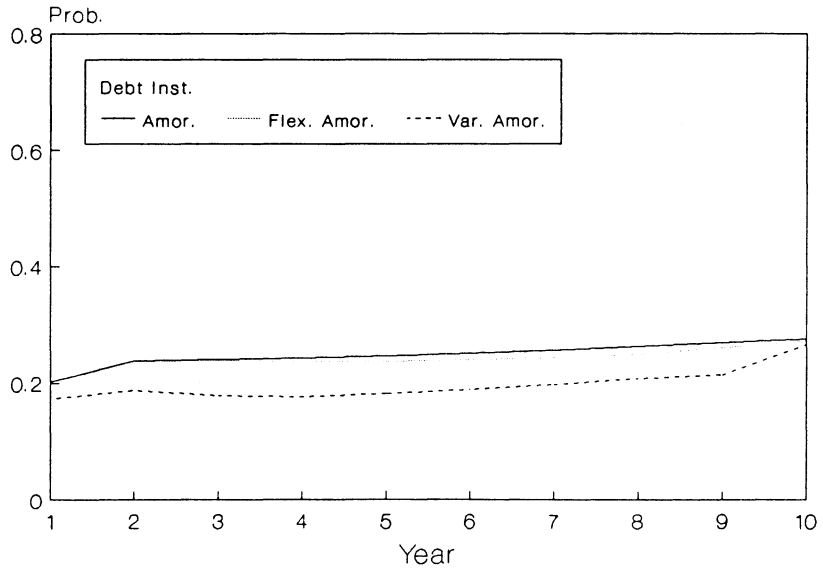


HARVESTING - Continued

Machine	Tractor Size (HP)	Net Cost of a New Implement	---Estimated-- Work Performed Ac/Hr	Ac/Yr	Total Cost/ Acre	Total Cost/ Hour	Operating Expense/ Acre	----Total Cost/Acre---- Equipment Tractor	Machine	Labor Charge	Diesel Fuel Gal/Ac
Combine Corn 3-30 Sm	Sml	8,250	2.07	414	37.88	78.34	14.80	28.55	4.23	5.10	2.90
Combine Corn 2-38 Sm	Sml	5,320	1.74	347	43.32	75.26	17.19	33.99	3.26	6.07	3.45
Combine Corn 3-38 Sm	Sml	9,554	2.62	524	30.43	79.71	11.82	22.54	3.86	4.03	2.29
Combine Corn 4-36 Md	Med	11,670	3.12	624	29.72	92.73	11.77	22.38	3.97	3.38	2.31
Combine Corn 4-30 Md	Med	11,220	2.60	520	35.47	92.23	14.08	26.85	4.56	4.06	2.77
Combine Corn 6-30 Lg	Lrg	14,785	3.90	780	28.75	112.11	11.59	22.03	4.02	2.70	2.23
Combine Corn 8-30 Lg	Lrg	19,220	4.73	945	24.71	116.82	9.81	18.17	4.31	2.23	1.84
Combine Corn 12-30 Jmb	Jmb	30,865	7.09	1,418	20.37	144.41	8.13	14.29	4.59	1.49	1.69
Potato Harvester Seed 2	120	45,000	1.49	320	62.60	93.51	15.38	13.41	31.73	17.46	4.82
Potato Harvester 2 Row	120	45,000	1.99	319	51.83	103.23	10.76	10.06	28.67	13.10	3.61
Rotary Disk Bean Cutter	100	9,544	5.20	416	9.46	49.18	1.79	3.43	3.99	2.03	1.15
Beet Lifter 4 Row	100	32,370	3.47	277	28.65	99.27	4.18	5.15	20.45	3.04	1.73
Beet Lifter 6 Row	120	41,000	5.20	416	23.16	120.41	3.38	3.85	17.28	2.03	1.38
Beet Topper 6 Row	75	13,500	4.67	373	10.97	51.20	1.68	2.57	6.37	2.04	0.96
Beet Topper 12 Row	140	25,500	9.33	747	9.52	88.82	1.64	2.49	6.00	1.02	0.90
Beet Wagon 8 Row	75	7,000	3.47	277	10.06	34.85	1.91	3.46	4.58	2.02	1.30

Figure 8. Probability of Having Additional Debt, Lambda = .33.

Panel A. Beginning Debt = $20,000



Panel B. Beginning Debt = $40,000